



THEME/IE/KARUR-DINDIGUL/NH-07/NHAI/2022/025

Date: 17.03.2022

To,

The DGM (T) Cum Project Director
National Highways Authority of India
Plot No.1 Aishwaryam Heights
Chennamanaickanpatti P.O Thadikombu Road
Dindigul-624 004.

Kind Attention: Mr. K.Govindasamy

Sub: Independent Engineer services during Operation & Maintenance Period of 4-lane divided carriageway facility of Karur to Dindigul Section of NH-7 from Km 292/600 and Dindigul to Samayanallur section of NH 07) from Km 373/725 to 426/775 in the State of Tamil Nadu to be executed under BOT (Toll) under NHDP Phase (Consultancy Package No. IE/O&M/2016/Package-III) – **Re Submission of Penalty for first and second Renewal as per Clause: 2.6.1 Schedule "L" of Concession Agreement - Proposal requested- Reg.**

Ref:

- | | |
|---|------------------------------|
| 1. NHAI-PIU-DGL MAIL | Dated: 16/03/2022 @ 10.19 AM |
| 2. THEME/IE/KARUR-DINDIGUL/NH-07/NHAI/2022/016 | Dated: 03.03.2022 |
| 3. THEME/IE/KARUR-DINDIGUL/NH-07/DK/2022/024 | Dated: 02.03.2022 |
| 4. NHAI/PIU/DGL/Penalty/NH-7/Karur-Dindigul/2022/349 | Dated: 14.02.2022 |
| 5. NHAI/PIU/DGL/Penalty/NH-7/Karur-Dindigul/2022/053 | Dated: 08.01.2022 |
| 6. THEME/IE/KARUR-DINDIGUL/NH-07/DK/2021/071 | Dated: 27.10.2021 |
| 7. THEME/IE/KARUR-DINDIGUL/NH-07/DK/2021/063 | Dated: 30.09.2021 |
| 8. BLOOM/Karur-Dindigul/NH-7/NHAI/2019/035 | Dated: 30.05.2019 |
| 9. BLOOM/Karur-Dindigul/NH-7/NHAI/2018/069 | Dated: 30.11.2018 |
| 10. BLOOM/Karur-Dindigul/NH-7/NHAI/2018/030 | Dated: 08.05.2018 |
| 11. NHAI/Policy Guidelines for Periodic Maintenance & Damages/2018 No.8.3.32 | Dated: 05.02.2018 |
| 12. Concession Agreement Clause 2.6.1 of Schedule –“L”
Concession Agreement signed | Dated: 20.04.2006 |

Sir,

With reference to the letter cited above regarding as per Concession Agreement Schedule "L" of Clause: 2.6.1, entire operations period for the project Highway during the Concession period, **Renewal of the wearing Surface of the road pavement once every five Years.**

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In this continuation we examined the subject matter, we wish to bring the following to your kind attention:

BASIC DETAILS ABOUT THE PROJECT:

1	Name of the Project	Design, Construction, Development, Finance, Operation and Maintenance of Km.305+600(Km.299+600)(End of Karur Bypass) to Km.373+725 (New Km.367+725)(Start of Dindigul bypass) and Improvement, Operation and Maintenance of Km.292+600 (New Km.290+000) (Start of Karur bypass) to Km.305+600 (Km.299+600) (End of Karur Bypass) on NH-7 in the State of Tamil Nadu on Build Operate & Transfer (BOT) basis, NS-2/BOT/TN-04.
2	Concessionaire	M/s.TN(DK)Express ways limited
3	Agreement Signed date	20.04.2006
4	Total Length of project	77.725 km
5	Appointed Date (Development Period 180 Days from 20.04.2006)	17.10.2006
6	Contract project Completion Date	16.04.2009
7	Concession Period 20 Years (Including construction period)	up to 16.10.2026
8	COD as per Agreement	16.04.2009
9	PCOD issued	04.11.2009
10	First Renewal date	04.11.2014
11	Second Renewal date	03.11.2019



12	Construction Period IC	M/s. Egis Becom international in association with Egis India Consulting engineers Pvt Ltd.
13	1 st - O&M Period IE	CDM Smith India Pvt Ltd. (01.04.2013 to 30.04.2016)
14	2nd - O&M Period IE	M/s. Bloom Companies LLC (06.01.2017 to 27.11.2020)
15	Present IE	M/s.Theme Engineering Services Pvt.Ltd. 28.11.2020 to Till Date.

Commercial operation for the Project Started on 05.11.2009 and as intimated and Also as per Clause 2.6.1 of Schedule 'L' Operation and Maintenance is applicable for the Project Highway during the entire Concession Period, Various important activities to be Carried out during this stage are:

REGULAR PERIODIC MAINTENANCE ACTIVITIES:

- (i) Renewal of the wearing surface of the road **Pavement once every 05 years.**

As per Clause 4.3.1 the riding quality of the pavement shall be ensured by satisfying the minimum requirements given herein under.

- (ii) Surface roughness of the Project Highway on completion of construction shall be 2000 mm/km as measured by vehicle mounted Bump Integrator.
- (iii) Surface roughness shall not exceed 3000 mm/km during the service life of pavement at any time. **A renewal coat of bituminous concrete shall be laid every 05 years after initial construction** or where the roughness value reaches 3000 mm/km whichever is earlier to bring it to the initial value of 2000 mm/km.

The Concessionaire has commenced the maintenance activities and accordance with Clause 4.3.1 & 4.3.2 of Schedule 'L' of CA such as providing strengthening course and **renewal of wearing surface started on 01.01.2019 with a delay of 04 years and 2 months.** 1st renewal work has been completed for the entire length of project highway i.e. 77.725 Km. According to Clause 18.13, the M/s. Bloom companies LLC previous IE of this project has calculated the damages to be paid up to 30.11.2018 by the Concessionaire for an amount of Rs.101.13 Cr. Vide ref - 09, Lr.no. Bloom/ Karur-Dindigul/NH-07/NHAI/2018/069 Dated: 30.11.2018.



As per the above the **Concessionaire has to complete the first renewal of wearing surface of the road pavement on or before 04-11-2014.** It is the obligation of the concessionaire to complete the first renewal of wearing surface of the road pavement within the specified time frame as per the contract clauses of Concession Agreement.

Further as per the Clause 18.12 of the "CA" "In the event if the Concessionaire does not maintain/repair the Project highway or a part thereof up to and in accordance with Specifications and Standards and/or in accordance with the Maintenance Program or the Maintenance Manual, and shall have failed to commence remedial works within 30 days of the receipt of notice in this behalf from NHAI or the Independent Consultant, or the O & M Inspection report as the case may be, NHAI shall without prejudice to its rights under this agreement including termination thereof be entitled to undertake the repair and maintenance of the Project Highway.

As per Clause 18.13 of the "CA," In the event NHAI does not exercise its option to undertake the required repair and maintenance after expiry of 30 days period stipulated in Clause 18.12 it shall recover damages from the Concessionaire for default in Operating and maintaining the project Highway in conformity with this Agreement. **Such Damages shall be payable after the aforesaid period of 30 days and until the default is cured. The amount of Damages shall be calculated for each day of default at the higher of the following namely (a) Rs.10,000/- and (b) 0.1% of the cost of such repair as estimated by the Independent Consultant".**

In this connection, the NHAI has issued the policy guidelines No. 8.3.32, dated. 05.02.2018 for calculating the amount of damages to be imposed the concessionaire of BOT (Toll/Annuity) projects on account of delay in periodic maintenance work.

As per NHAI policy guidelines No. 8.3.32, dated: 05.02.2018, we have calculated the Damages as per Standard Operating Procedure (SOP) vide ref: 11, clause: 4.4 of Illustration (ii) as follows.

Concessionaire achieves PCOD on 04.11.2009. Therefore, periodic maintenance is to be completed by the concessionaire by 04.11.2014. **Concessionaire commences the first renewal of wearing surface work on 01.01.2019 and completes it on 27.08.2021,** Lr.No. TNDK/NHAI/Theme/NH-7/TN-4/2021/Aug/085 Dated: 27.08.2021. The Total cost of renewal work is **Rs.78,62,43,124 (SOR 2021-2022).** **Total delay in renewal work is 2489 days. However, the duration of renewal work is 970 days.**



Damages to be recovered is higher of the following:

Damages = $10000 \times (2489 - 30) = \text{Rs.} 24590000/-$

Damages = $[0.1\% \times (1519 - 30) \times 786243124] + [0.1\% \times 0.5 \times 786243124 \times 970]$

Rs.1170716011/- + Rs. 381327915/-

Rs.155,20,43,926/-

In view of the above as per provision of Concession Agreement, **Concessionaire is liable to pay the damages for an Amount of Rs.155,20,43,926/-** as per Clause 18.13 and also as per NHAI policy guidelines dated: 05-02-2018 Clause: 4.4 of Illustration (ii).

Second Renewal of wearing surface:

As per the above the Concessionaire has to complete the **Second renewal of wearing surface of the road pavement on or before 03-11-2019**. It is the obligation of the concessionaire to complete the second renewal of wearing surface of the road pavement within the specified time frame as per the contract clauses of Concession Agreement.

Further as per the Clause 18.12 of the "CA" "In the event if the Concessionaire does not maintain/repair the Project highway or a part thereof up to and in accordance with Specifications and Standards and/or in accordance with the Maintenance Program or the Maintenance Manual, and shall have failed to commence remedial works within 30 days of the receipt of notice in this behalf from NHAI or the Independent Consultant, or the O & M Inspection report as the case may be, NHAI shall without prejudice to its rights under this agreement including termination thereof be entitled to undertake the repair and maintenance of the Project Highway.

As per Clause 18.13 of the "CA," "In the event NHAI does not exercise its option to undertake the required repair and maintenance after expiry of 30 days period stipulated in Clause 18.12 it shall recover damages from the Concessionaire for default in Operating and maintaining the project Highway in conformity with this Agreement. Such Damages shall be payable after the aforesaid period of 30 days and until the default is cured. The amount of Damages shall be calculated for each day of default at the higher of the following namely (a) Rs.10,000/- and (b) 0.1% of the cost of such repair as estimated by the Independent Consultant".

Based on the above the Concessionaire is liable to pay Damages as per Clause 18.13 until the default is cured and the same was worked out given below.



Date of second renewal completion	Damages start date	Damages as on	Days for which damages payable	Cost of Repair as per Annexure attached	0.1% of Cost of repair	Higher of E and Rs.10,000/-	Total Damages payable
A	B=A+30	C	D	E	F=0.1% Of E	G	H=D X G
03/11/2019	03/12/2019	28/02/2022	819 days	786243124	786243	786243	643933017

As on 28/02/2022 the total Amount of **Rs.64,39,33,017/- (Sixty Four Crore Thirty Nine lakh Thirty Three Thousand and Seventeen Rupees only)** damages shall be payable by the Concessionaire until the default is cured. The amount of damages would be vary/increase until the default is cured.

Delay in completion of first renewal of wearing surface recover the damages for an Amount of **Rs.1552043926/-** from the concessionaire as per Clause: 18.13 of Concession Agreement and as per NHAI Policy guidelines (SOP).


Delay in completion of Second renewal of wearing surface recover the damages **Rs.643933017/-** from the concessionaire as per Clause: 18.13 up to 28/02/2022. Damages shall be payable by the Concessionaire until the default is cured. The amount of damages would be vary/increase until the default is cured.

Hence we here with recommended to Penalty payable by the concessionaire for first & second renewal of wearing surface damages works out for an Amount of **Rs.219.597 Crores** (Rs. 155.204 Crore + Rs.64.393 Crore, up to 28/02/2022).

This is for your Kind information.

Thanking You,

For Theme Engineering Services Pvt. Ltd.


17 Mar 2022
K.Srinivasan
Team Leader
Dindigul.

Encl: Estimate

- CC: 1. The Project Manager, M/s.TN (DK) Expressways Ltd, Velanchettiyur, Aravakurichi.
2. N.K Sethi - Authorized signatory - Jaipur.
3. Projects @Theme Engineering Services – Jaipur.

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Project Name :Design, Construction, Development, Finance, Operation and Maintenance of Km.305+600(New Km.299+600)(End of Karur Bypass)to Km.373+725(New Km.367+725) (Start of Dindigul bypass) and Improvement,Operation and Maintenance of Km.292+600 (New Km.290+000) (Start of Karur bypass) to Km.305+600 (New Km.299+600) (End of Karur Bypass) on NH-7 in the State of Tamil Nadu on Build Operate & Transfer (BOT) basis.Package No. : NS-2/BOT/TN-04

Damages Calculation as per NHAI/Policy Guidelines for Periodic Maintenance first renewal of wearing surface

Calculations of cost Estimate For FY-2021-2022

Damages Start Date	Damages up to	Days for which Damages Payable	Cost of Repair (As per Annexure attached)	0.1% of Cost of repair	Higher of E and Rs.10,000	Remarks
A	B	C	D	E=0.1% of D	F	H
4-Nov-14	27-Aug-21	2489	786243124	786243	786243	

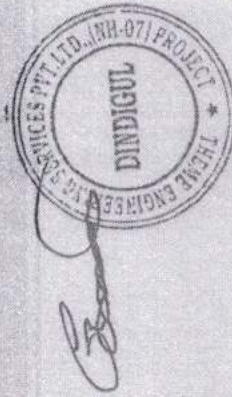


Project Name : Design, Construction, Development, Finance, Operation and Maintenance of Km.305+600(New Km.299+600)(End of Karur Bypass)to Km.373+725(New Km.367+725) (Start of Dindigul bypass) and Improvement, Operation and Maintenance of Km.292+600 (New Km.290+000) (Start of Karur bypass) to Km.305+600 (New Km.299+600) (End of Karur Bypass) on NH-7 in the State of Tamil Nadu on Build Operate & Transfer (BOT) basis. Package No. : NS-2/BOT/TN-04

Calculations for the Damages as per the Clause :18.13 for not attending Periodic Maintenance second renewal of wearing surface

Calculations of cost Estimate For FY-2021-2022

Damages Start Date	Damages up to	Days for which Damages Payable	Cost of Repair (As per Annexure attached)	0.1% of Cost of repair	Higher of E and Rs.10,000	Total Damages Payable	Remarks
A	B	C	D	E=0.1% of D	F	G =C x F	H
3-Dec-19	28-Feb-22	819	786243124	786243	786243	643933017	
Total						643933017	



Project Name : Design, Construction, Development, Finance, Operation and Maintenance of Km.305+600(New Km.299+600)(End of Karur Bypass)to Km.373+725(New Km.367+725) (Start of Dindigul bypass) and Improvement, Operation and Maintenance of Km.292+600 (New Km.290+000) (Start of Karur bypass) to Km.305+600 (New Km.299+600) (End of Karur Bypass) on NH-7 in the State of Tamil Nadu on Build Operate & Transfer (BOT) basis. Package No. : NS-2/BOT/TN-04

Calculations of cost Estimate

S.No	Description	Nos	Length	Breath	Depth	Total Qty	Rate per Unit	Unit	Cost	Remarks
1	Tack Coat for Main Carriage Way	2	77725	8.75		1360188	10.00	Sq.m	13601880	
2	Main Carriage Way (BC Layer)	2	77725	8.75	0.04	54407.50	10923.00	Cum	594293122.5	
3	Tack Coat for Service road (LHS)	1	9499	5.5		52244.50	10.00	Sq.m	522445	
4	Tack Coat for Service road (LHS)	1	9495	7		66465.00	10.00	Sq.m	664650	
5	Service road -LHS (SDBC Layer)	1	9499	5.5	0.025	1306.11	9663.00	cum	12620965.09	
6	Service road -LHS (SDBC Layer)	1	9495	7	0.025	1661.63	9663.00	Cum	16056282.38	
7	Tack Coat for Service road (RHS)	1	10161	5.5		55885.50	10.00	Sq.m	558855	
8	Tack Coat for Service road (RHS)	1	9495	7		66465.00	10.00	Sq.m	664650	
9	Service road -RHS (SDBC Layer)	1	10161	5.5	0.025	1397.14	9663.00	Cum	13500539.66	
10	Service road -RHS (SDBC Layer)	1	9495	7	0.025	1661.63	9663.00	Cum	16056282.38	
11	Thermoplastic Road Marking	1	as per following details			56002.50	873.00	Sq.m	48890182.5	
12	Road Studs	1	as per following details			25407.00	567.00	Nos	14405769	
13	BC Milling	2	77725	8.75		1360187.5	40	Sq.m	54407500	Market Rate
Total									786243124	
0.1% of Total Approximate Cost									786243	

S.No	Description	Nos	Length	Breath	Depth	Unit	Total Qty
1	Edge line -	4	77725	0.15		Sq.m	46635
	Centre line -	2*10520	3	0.1		Sq.m	6312
	Transverse bar marking -	2*12*65	7	0.15		Sq.m	1638
	Pedestrian crossing -	2*7*135	1.5	0.5		Sq.m	1417.5
Thermoplastic Road Marking as per Inventory Details							56002.5
2	Road Studs at Curves & Median opening as per Inventory Details						Nos 25407



Tack Coat								
S.No	Chainage		Nos	Side	Length	Breath	Qty	Remarks
	From	To						
1	290+000	367+725	2	BHS	77725	8.75	1360188	Main Carriage Way
2	290+250	294+580	1	LHS	4330	7	30310	Service Road
3	294+700	297+600	1	LHS	2900	7	20300	Service Road
4	298+400	300+050	1	LHS	1650	7	11550	Service Road
5	306+916	308+080	1	LHS	1164	5.5	6402	Service Road
6	310+485	311+257	1	LHS	772	5.5	4246	Service Road
7	312+470	313+580	1	LHS	1110	5.5	6105	Service Road
8	322+900	323+919	1	LHS	1019	5.5	5604.5	Service Road
9	330+923	331+787	1	LHS	864	5.5	4752	Service Road
10	333+170	334+590	1	LHS	1420	5.5	7810	Service Road
11	340+813	342+125	1	LHS	1312	5.5	7216	Service Road
12	345+370	346+312	1	LHS	942	5.5	5181	Service Road
13	362+478	363+374	1	LHS	896	5.5	4928	Service Road
14	367+110	367+725	1	LHS	615	7	4305	Service Road
15	290+250	294+580	1	RHS	4330	7	30310	Service Road
16	294+700	297+600	1	RHS	2900	7	20300	Service Road
17	298+400	300+050	1	RHS	1650	7	11550	Service Road
18	306+935	308+065	1	RHS	1130	5.5	6215	Service Road
19	310+430	311+258	1	RHS	828	5.5	4554	Service Road
20	312+473	313+571	1	RHS	1098	5.5	6039	Service Road
21	322+932	323+929	1	RHS	997	5.5	5483.5	Service Road
22	330+932	331+822	1	RHS	890	5.5	4895	Service Road
23	333+175	334+776	1	RHS	1601	5.5	8805.5	Service Road
24	340+807	342+124	1	RHS	1317	5.5	7243.5	Service Road
25	345+355	346+312	1	RHS	957	5.5	5263.5	Service Road
26	354+790	355+044	1	RHS	254	5.5	1397	Service Road
27	362+285	363+374	1	RHS	1089	5.5	5989.5	Service Road
28	367+110	367+725	1	RHS	615	7	4305	Service Road
					TOTAL Qty		1601248	



Main Carriage Way - Bituminious Concrete								
S.No	Chainage		Nos	Length	Breath	Depth	Qty	Remarks
	From	To						
1	290+000	367+725	2	77725	8.75	0.04	54407.5	MCW



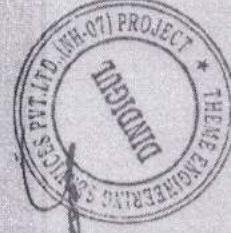
Project Name : Design, Construction, Development, Finance, Operation and Maintenance of Km.305+600(New Km.299+600)(End of Karur Bypass)to Km.373+725(New Km.367+725) (Start of Dindigul bypass) and Improvement,Operation and Maintenance of Km.292+600 (New Km.290+000) (Start of Karur bypass) to Km.305+600 (New Km.299+600) (End of Karur Bypass) on NH-7 in the State of Tamil Nadu on Build Operate & Transfer (BOT) basis. Package No. : NS-2/BOT/TN-04

Service Road - Semi dense bituminous concrete

S.No	Chainage		Side	No	Length	Breath	Depth	Qty	Remarks
	From	To							
1	290+250	294+580	1	LHS	4330	7	0.025	757.75	Service Road
2	294+700	297+600	1	LHS	2900	7	0.025	507.5	Service Road
3	298+400	300+050	1	LHS	1650	7	0.025	288.75	Service Road
4	306+916	308+080	1	LHS	1164	5.5	0.025	160.05	Service Road
5	310+485	311+257	1	LHS	772	5.5	0.025	106.15	Service Road
6	312+470	313+580	1	LHS	1110	5.5	0.025	152.625	Service Road
7	322+900	323+919	1	LHS	1019	5.5	0.025	140.1125	Service Road
8	330+923	331+787	1	LHS	864	5.5	0.025	118.8	Service Road
9	333+170	334+590	1	LHS	1420	5.5	0.025	195.25	Service Road
10	340+813	342+125	1	LHS	1312	5.5	0.025	180.4	Service Road
11	345+370	346+312	1	LHS	942	5.5	0.025	129.525	Service Road
12	362+478	363+374	1	LHS	896	5.5	0.025	123.2	Service Road
13	367+110	367+725	1	LHS	615	7	0.025	107.625	Service Road
14	290+250	294+580	1	RHS	4330	7	0.025	757.75	Service Road



15	294+700	297+600	1	RHS	2900	7	0.025	507.5	Service Road
16	298+400	300+050	1	RHS	1650	7	0.025	288.75	Service Road
17	306+935	308+065	1	RHS	1130	5.5	0.025	155.375	Service Road
18	310+430	311+258	1	RHS	828	5.5	0.025	113.85	Service Road
19	312+473	313+571	1	RHS	1098	5.5	0.025	150.975	Service Road
20	322+932	323+929	1	RHS	997	5.5	0.025	137.0875	Service Road
21	330+932	331+822	1	RHS	890	5.5	0.025	122.375	Service Road
22	333+175	334+776	1	RHS	1601	5.5	0.025	220.1375	Service Road
23	340+807	342+124	1	RHS	1317	5.5	0.025	181.0875	Service Road
24	345+355	346+312	1	RHS	957	5.5	0.025	131.5875	Service Road
25	354+790	355+044	1	RHS	254	5.5	0.025	34.925	Service Road
26	362+285	363+374	1	RHS	1089	5.5	0.025	149.7375	Service Road
27	367+110	367+725	1	RHS	615	7	0.025	107.625	Service Road
Total Qty								6026.5	



Bituminious Concrete Milling							
S.No	Chainage		Nos	Length	Breath	Qty	Remarks
	From	To					
1	290+000	367+725	2	77725	8.75	1360187.5	MCW



CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

Sr No	Ref. to MORTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
5.1	502	Prime Coat					
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means.					
		Unit = sqm					
		Taking output = 3500 sqm					
		a) Labour					
		Mate	day	0.080	639.00	51.12	L-12
		Mazdoor	day	2.000	635.00	1270.00	L-13
		b) Machinery					
		Mechanical broom @ 1250 sqm per hour	hour	2.800	527.00	1475.60	P&M-031
		Air compressor 250 cfm	hour	2.800	472.00	1321.60	P&M-001
		Bitumen pressure distributor @ 1750 sqm per hour	hour	2.000	1586.00	3172.00	P&M-004
		Water tanker 6 KL capacity @ 1 trip per hour	hour	1.000	458.00	458.00	P&M-060
		c) Material					
		Bitumen emulsion @ 0.6 kg per sqm	tonne	2.100	48799.00	102477.90	M-077
		Cost of water	KL	6.000	300.00	1800.00	M-189
		d) Overhead charges @ 10% on (a+b+c)				11202.62	
		e) Contractor's profit @ 10% on (a+b+c+d)				12322.88	
		Cost for 3500 sqm = a+b+c+d+e				135551.73	
		Rate per sqm = (a+b+c+d+e)/3500				38.73	
					say	39.00	
		Note Bitumen primer has been provided @ 0.60 kg per sqm as per clause 502.8. Payment shall be made with adjustment, plus or minus, for the variation between this quantity and the actual quantity approved by the Engineer after the preliminary trials referred to in clause No. 502.4.3.					
5.2	503	Tack Coat					
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.					
		Unit = sqm					
		Taking output = 3500 sqm					
		a) Labour					
		Mate	day	0.080	639.00	51.12	L-12
		Mazdoor	day	2.000	635.00	1270.00	L-13
		b) Machinery					
		Mechanical broom @ 1250 sqm per hour	hour	2.800	527.00	1475.60	P&M-031
		Air compressor 250 cfm	hour	2.800	472.00	1321.60	P&M-001
		Emulsion pressure distributor @ 1750 sqm per hour	hour	2.000	1586.00	3172.00	P&M-004
		c) Material					
		Bitumen emulsion @ 0.2 kg per sqm	tonne	0.700	32935.00	23054.50	M-077
		d) Overhead charges @ 10% on (a+b+c)				3034.48	
		e) Contractor's profit @ 10% on (a+b+c+d)				3337.93	
		Cost for 3500 sqm = a+b+c+d+e				36717.23	
		Rate per sqm = (a+b+c+d+e)/3500				10.49	
					say	10.00	
		Note 1. Bitumen emulsion has been provided @ 0.20 kg per sqm as per clause 503.8. Payment shall be made with adjustment, plus or minus, for the variation between this quantity and actual quantity approved by the Engineer after preliminary trials referred to in clause No. 503.4.3					
		2. An output of 3500 sqm has been considered in case of prime coat and tack coat which can be covered by bituminous courses on the same day.					



CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		5. The individual density for each size of aggregates to be used for construction i.e. 37.5-25 mm, 25-10 mm etc. should be found in the laboratory and accordingly the quantities should be ammended for use in field. The average density of 1.5 tonne/cum is only a reference density in this Data Book.					
		6. The individual percentage of aggregates should be calculated from the total weight of dry aggregates i.e., excluding the weight of bitumen. The weight of filler will also be 2 per cent by weight of dry aggregates.					
5.7	508	Semi-Dense Bituminous Concrete					
		Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 508 complete in all respects					
		Unit = cum					
		Taking output = 195 cum (450 tonnes)					
		a) Labour					
		Mate	day	0.840	639.00	536.76	L-12
		Mazdoor working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	16.000	635.00	10160.00	L-13
		Skilled mazdoor for checking line & levels	day	5.000	708.00	3540.00	L-15
		b) Machinery					
		Batch mix HMP @ 75 tonne per hour	hour	6.000	20910.00	125460.00	P&M-022
		Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3954.00	23724.00	P&M-034
		Generator 250 KVA	hour	6.000	1950.00	11700.00	P&M-081
		Front end loader 1 cum bucket capacity	hour	6.000	1192.00	7152.00	P&M-017
		Tipper 10 tonne capacity	tonne.k m	450 x L	3.99	21546.00	Lead =12 km & P&M-058
		Add 10 per cent of cost of carriage to cover cost of loading and unloading				2154.60	
		Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	681.00	2655.90	P&M-044
		Vibratory roller 8 tonnes for intermediate rolling.	hour	6.00x0.65*	1967.00	7671.30	P&M-059
		Finish rolling with 6-8 tonnes smooth wheeled tandem roller	hour	6.00x0.65*	1201.17	4684.56	P&M-045
		c) Material					
		* Grading I: 13 mm (Nominal Size)					
		i) Bitumen@ 4.5 per cent of weight of mix	tonne	20.250	43855.00	888063.75	M-074
		ii) Aggregate					
		Total weight of mix = 450 tonnes					
		Weight of bitumen = 20.25 tonnes					
		Weight of aggregate = 450-20.25 = 429.75 tonnes					
		Taking density of aggregate = 1.5 ton/cum					
		Volume of aggregate = 286.5 cum					
		13.2 - 10 mm 20 per cent	cum	57.300	1369.36	78464.52	M-044
		10 - 5 mm 38 per cent	cum	108.870	1143.36	124477.97	M-040
		5 mm and below 40 per cent	cum	114.600	931.36	106734.24	M-030
		Filler @ 2 per cent of weight of aggregates.	tonne	8.620	6378.00	54978.36	M-188
		or					
		Grading II: 10 mm (Nominal Size)					



CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

Sr No	Ref. to MORTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Bitumen@5 per cent of weight of mix	tonne	22.500	43855.00	986737.50	M-074
		weight of mix = 450 tonne					
		Aggregate					
		Total weight of mix = 450 tonnes					
		Weight of bitumen = 22.5 tonnes					
		Weight of aggregate = 450 - 22.50 = 427.50 tonnes					
		Taking density of aggregate = 1.5 ton/cum					
		Volume of aggregate = 285 cum					
		9.5 - 4.75 mm@ 57 per cent	cum	162.450	1143.36	185739.37	M-040
		4.75 and below@ 41 per cent	cum	116.850	931.36	108829.81	M-030
		Filler @ 2 per cent of weight of aggregates.	tonne	8.620	6378.00	54978.36	M-188
		*Any one of the alternative may be adopted as per approved design					
		(i) for Grading I (13 mm nominal size)					
		d) Overhead charges @ 10% on (a+b+c)				147370.40	
		e) Contractor's profit @ 10% on (a+b+c+d)				162107.44	
		Cost for 205 cum = a+b+c+d+e				1783181.79	
		Rate per cum = (a+b+c+d+e)/195 (For Grading I)				9144.52	
					say	9145.00	
5.7		(ii) for Grading II (10 mm nominal size)					
		d) Overhead charges @ 10% on (a+b+c)				155727.02	
		e) Contractor's profit @ 10% on (a+b+c+d)				171299.72	
		Cost for 205 cum = a+b+c+d+e				1884296.90	
		Rate per cum = (a+b+c+d+e)/195 (For Grading-II)				9663.06	
					say	9663.00	
		Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have been multiplied by a factor of 0.65					
		2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.					
		3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.					
		4. In case SDBC is laid over freshly laid tack coat, provision of broom and 2 mazdoor shall be deleted as the same has been included in the cost of tack coat.					
		5. The quantity of Bitumen to be adjusted as per job mix formula.					
5.8	509	Bituminous Concrete					
		Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects					
		Unit = cum					
		Taking output = 191 cum (450 tonnes)					
		a) Labour					
		Mate	day	0.840	639.00	536.76	L-12
		Mazdoor working with HMP, mechanical broom, paver, roller asphalt cutter and assistance for setting out lines, levels and layout of construction	day	16.000	635.00	10160.00	L-13



CHAPTER - 5 BASES AND SURFACE COURSES (BITUMINOUS)

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Skilled mazdoor for checking line & levels	day	5.000	708.00	3540.00	L-15
		b) Machinery					
		Balch mix HMP @ 120 tonne per hour	hour	6.000	26478.00	158868.00	P&M-021
		Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	3954.00	23724.00	P&M-034
		Generator 250 KVA	hour	6.000	1950.00	11700.00	P&M-081
		Front end loader 1 cum bucket capacity	hour	6.000	1192.00	7152.00	P&M-017
		Tipper 10 tonne capacity	tonne.k m	450 x L	3.99	21546.00	Lead =12 km & P&M-058
		Add 10 per cent of cost of carriage to cover cost of loading and unloading				2154.60	
		Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00x0.65*	681.00	2655.90	P&M-044
		Vibratory roller 8 tonnes for intermediate rolling.	hour	6.00x0.65*	1967.00	7671.30	P&M-059
		Finish rolling with 6-8 tonnes smooth wheeled tandem roller.	hour	6.00x0.65*	1201.17	4684.56	P&M-045
		c) Material					
		i) Bitumen @ 5 per cent of weight of mix	tonne	25.130	43855.00	1102076.15	M-074
		ii) Aggregate					
		Total weight of mix = 450 tonnes					
		Weight of bitumen = 22.5 tonnes					
		Weight of aggregate = 450 - 22.50 = 427.50 tonnes					
		Taking density of aggregate = 1.5 ton/cum					
		Volume of aggregate = 285 cum					
		* Grading - I-19 mm (Nominal Size)					
		20 - 10 mm 35 per cent	cum	99.750	1442.53	143892.37	M-045
		10 - 5 mm 23 per cent	cum	65.550	1143.36	74947.47	M-040
		5 mm and below 40 per cent	cum	114.000	931.36	106175.42	M-030
		Filler @ 2 per cent of weight of aggregates.	tonne	8.620	6378.00	54978.36	M-188
		or					
		Grading - II-13 mm (Nominal Size)					
		13.2 - 10 mm 30 per cent	cum	85.500	1369.36	117080.57	M-044
		10 - 5 mm 25 per cent	cum	71.250	1143.36	81464.64	M-040
		5 mm and below 43 per cent	cum	122.550	931.36	114138.58	M-030
		Filler @ 2 per cent of weight of aggregates.	tonne	8.620	6378.00	54978.36	M-188
		*Any one of the alternative may be adopted as per approved design					
		(i) for Grading-I (13 mm nominal size)					
		d) Overhead charges @ 10% on (a+b+c)				173646.29	
		e) Contractor's profit @ 10% on (a+b+c+d)				191010.92	
		Cost for 191 cum = a+b+c+d+e				2101120.09	
		Rate per cum = (a+b+c+d+e)/191				11000.63	
					say	11001.00	
5.8		(ii) for Grading-II(10 mm nominal size)					
		d) Overhead charges @ 10% on (a+b+c)				172413.14	
		e) Contractor's profit @ 10% on (a+b+c+d)				189654.46	
		Cost for 205 cum = a+b+c+d+e				2086199.01	
		Rate per cum = (a+b+c+d+e)/191 (For Grading-II)				10922.51	
					say	10923.00	
		Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of these rollers, their usage rates have been multiplied by a factor of 0.65. 2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.					



CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES							
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		d) Contractor's profit @ 10% on (a+b+c)				172.92	
		Cost for 10 sqm = a+b+c+d				1902.10	
		Rate per sqm = (a+b+c+d)/10				190.21	
					say	<u>190.00</u>	
8.12	803	Painting Lines, Dashes, Arrows etc on Roads in Two Coats on Old Work					
		Painting lines, dashes, arrows etc on roads in two coats on old work with ready mixed road marking paint conforming to IS: 164 on bituminous surface, including cleaning the surface of all dirt, dust and other foreign matter, demarcation at site and traffic control					
		(i) Over 10 cm in width					
		Unit = sqm					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.060	639.00	38.34	L-12
		Painter Ist class	day	0.300	688.00	206.40	L-18
		Mazdoor	day	1.250	635.00	793.75	L-13
		b) Material					
		Road marking paint	Litre	0.900	290.00	261.00	M-132
		c) Overhead charges @ 10% on (a+b)				129.95	
		d) Contractor's profit @ 10% on (a+b+c)				142.94	
		Cost for 10 sqm = a+b+c+d				1572.38	
		Rate per sqm = (a+b+c+d)/10				157.24	
					say	<u>157.00</u>	
8.12		(ii) Up to 10 cm in width					
		Unit = sqm					
		Taking output = 10 sqm					
		a) Labour					
		Mate	day	0.070	639.00	44.73	L-12
		Painter Ist class	day	0.350	688.00	240.80	L-18
		Mazdoor	day	1.350	635.00	857.25	L-13
		b) Material					
		Road marking Paint	Litre	0.900	290.00	261.00	M-132
		c) Overhead charges @ 10% on (a+b)				140.38	
		d) Contractor's profit @ 10% on (a+b+c)				154.42	
		Cost for 10 sqm = a+b+c+d				1698.57	
		Rate per sqm = (a+b+c+d)/10				169.86	
					say	<u>170.00</u>	
8.13	803	Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface					
		Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes.					
		Unit = sqm					
		Taking output = 600 sqm					
		a) Labour					
		Mate	day	0.030	639.00	19.17	L-12



CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES

Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Mazdoor	day	0.750	635.00	476.25	L-13
		b) Machinery					
		Road marking machine @ 60 sqm per hour	hour	10.000	138.00	1380.00	P&M-043
		Tractor-trolley	hour	0.500	536.00	268.00	P&M-053
		c) Material					
		Hot applied thermoplastic compound	Litre	1500.000	281.75	422625.00	M-118
		Reflectorising glass beads	kg	150.000	55.00	8250.00	M-152
		d) Overhead charges @ 10% on (a+b+c)				43301.84	
		e) Contractor's profit @ 10% on (a+b+c+d)				47632.03	
		Cost for 600 sqm = a+b+c+d+e				523952.29	
		Rate per sqm = a+b+c+d+e)/600				873.25	
					say	873.00	
		Note					
		1. A sealing primer may be applied in advance on cement concrete pavement to ensure proper bonding. Any laitance and/or curing compound to be removed where paint is required to be applied on concrete surface.					
		2. Cost of painter is already included in hire charges of road marking machine.					
8.14	804	Kilometre Stone					
		Reinforced cement concrete M15 grade kilometre stone of standard design as per IRC:8-1980, fixing in position including painting and printing etc					
		(i) 5th kilometre stone (precast)					
		Unit = Nos.					
		Taking output = 6 Nos.					
		a) M-15 grade of concrete	cum	2.350	7059.00	16588.65	Item 12.8 (A)
		b) Steel reinforcement @ 5 kg per sqm	kg	22.080	83.74	1848.89	Item 13.6 /1000
		c) Excavation in soil for foundation	cum	1.680	639.00	1073.52	Item No. 3.13
		d) Painting two coats on concrete surface	sqm	9.850	116.00	1142.60	Item 8.8
		e) Lettering on km post (average 30 letters of 10 cm height each)	per cm per letter	1800.000	1.00	1800.00	Item 8.3
		Transportation and fixing					
		f) Labour					
		Mate	day	0.260	639.00	166.14	L-12
		Mason	day	0.600	861.00	516.60	L-11
		Mazdoor including loading/unloading	day	6.000	635.00	3810.00	L-13
		g) Machinery					
		Tractor-trolley	hour	6.000	536.00	3216.00	P&M-053
		h) Overhead charges @ 10% on (f+g)				770.87	
		i) Contractor's profit @ 10% on (f+g+h)				847.96	
		Cost for 6 Nos. 5th km stone = a+b+c+ d+e +f+g+h +i				31781.24	
		Rate for each 5th km stone = (a+b+c+ d+e +f+g+h +i) /6				5296.87	
					say	5297.00	
8.14		(ii) Ordinary kilometer stone (precast)					
		Unit = Nos.					
		Taking output = 14 Nos.					
		a) M-15 grade of concrete	cum	3.770	7059.00	26612.43	Item 12.8 (A)
		b) Steel reinforcement @ 5 kg per sqm	kg	26.320	83.74	2203.93	Item 13.6 /1000



CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES							
Sr No	Ref. to MoRTH Spec.	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
		Providing and installing a patentend HI - DRO cell system as a traffic impact attenuators, using plastic tubes 50 cm dia, 1.2 m in height, 25 mm opening at the top, placed in three rows, filled with water and tied with a 20 mm steel wire rope					
		Unit = sqm					
		Taking output = 10sqm					
		a) Labour					
		Mate	day	0.100	639.00	63.90	L-12
		Mazdoor	day	2.500	635.00	1587.50	L-13
		b) Material					
		Plastic tubes 50 cm dia, 1.2 m high	each	40.000	30.00	1200.00	M-139
		Cost of water	KL	12.000	300.00	3600.00	M-189
		20 mm steel wire rope	kg	100.000	62.50	6250.00	M-176
		Add 1 per cent of cost of wire rope for clamps etc.				62.50	
		c) Machinery					
		Tractor-trolley	hour	2.000	536.00	1072.00	P&M-053
		Water tanker 6 KL capacity	hour	2.000	458.00	916.00	P&M-060
		d) Overhead charges @ 10% on (a+b+c)				1475.19	
		e) Contractor's profit @ 10% on (a+b+c+d)				1622.71	
		Cost for 10 sqm = a+b+c+d+e				17849.80	
		Rate per sqm = (a+b+c+d+e)/10				1784.98	
					say	1785.00	
8.35	Suggestive	Road Markers/Road Stud with Lense Reflector					
		Providing and fixing of road stud 100x 100 mm, die-cast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per BS 873 part 4:1973					
		Unit = Nos					
		Taking output = 50Nos					
		a) Labour					
		Mate	day	0.040	639.00	25.56	L-12
		Mazdoor	day	1.000	635.00	635.00	L-13
		b) Material					
		Aluminium studs 100 x 100 mm fitted with lense reflectors	each	50.000	414.00	20700.00	M-062
		Add 10 per cent of cost of material for fixing and installation				2070.00	
		c) Overhead charges @ 10% on (a+b)				2343.06	
		d) Contractor's profit @ 10% on (a+b+c)				2577.36	
		Cost for 50 studs = a+b+c+d				28350.98	
		Rate per studs = (a+b+c+d)/50				567.02	
					say	567.00	
8.36	Suggestive	Traffic Cone					
		Provision of red fluorescent with white reflective sleeve traffic cone made of low density polyethylene (LDPE) material with a square base of 390 x 390 x 35 mm and a height of 770 mm, 4 kg in weight, placed at 1.5 m interval, all as per BS 873					
		Unit = Running metre					





भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय)

National Highways Authority of India

(Ministry of Road Transport and Highways)

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NHAI/Policy Guidelines/Calculation for Periodic Maintenance & Damages/2018

No. 8.3.32, Dated the 5th February 2018

(Decision taken by EC in the meeting dated 21.12.2017 on the Agenda no.327.04 & File No.

NHAI/Tech/NS-2/BOT/AP-6/2007)

Sub: Establishment of Rational-cum-Pragmatic Settlement Approach for calculating the amount of damages to be imposed on the Concessionaire of BOT (Toll/Annuity) projects on account of delay in periodic maintenance work.

1. Objective:

The NHAI has entered into various concession agreements during the period 2006 & 2007 with the Concessionaires for implementing the Highway Projects on BOT (Toll)/ BOT (Annuity). As per various clauses of these concession agreements, Concessionaries have to carry out the regular periodic maintenance by doing renewal of the wearing surface of the road pavement. In this context, it has been observed that there has been slippage on the part of Concessionaires in carrying out the regular periodic maintenance works as per the specified timelines.

2. Provisions in Concession Agreement w.r.t. Periodic Maintenance & Damages:

2.1 Clause 2.6.1 of Schedule L: This is applicable for entire Operations Period for the Project Highway during the entire Concession Period. Various important activities to be carried out during this stage are:

a) Regular periodic maintenance activities :

- i) Renewal of the wearing surface of the road pavement once every 5 years;
- ii) Strengthening course to be provided on 'as required' basis.

2.2 Clause 4.3.1 of Schedule L: The riding quality of the pavement shall be ensured by satisfying the minimum requirements given hereunder:-

- i) Surface roughness of the Project Highway on completion of construction shall be 2000 mm/km as measured by vehicle mounted Bump Integrator.
- ii) Surface roughness shall not exceed 3000 mm/km during the service life of pavement at any time. A renewal coat of bituminous concrete shall be laid every 5 years after initial construction or where the roughness value reaches 3000 mm/km whichever is earlier to bring it to the initial value of 2000 mm/km.

2.3 Clause 18.12: In the event the Concessionaire does not maintain and /or repair the Project Highway or a part thereof upto and in accordance with the Specifications and Standards and/or in accordance with the maintenance programme or the maintenance Manual, and shall have failed to commence remedial works within 30 days of receipt of notice in this behalf from NHAI or the Independent Consultant, or the O&M Inspection Report, as the case may be, NHAI shall, without prejudice to its rights under this Agreement, including Termination thereof, be entitled to undertake the repair and maintenance of the Project Highway at the risk and cost of the Concessionaire and to recover the same from the Concessionaire. In addition to recovery of the aforesaid cost of repair and maintenance by NHAI, a sum equal to 25% of such cost shall also be recovered by NHAI from the Concessionaire as Damages. NHAI shall have the right and the Concessionaire hereby expressly grants to NHAI the right to recover the same directly from the Escrow Account and for that purpose the Concessionaire hereby expressly authorises NHAI and

hereby gives Irrevocable Instructions to the Escrow Bank to make payment from the Escrow Account in accordance with the Instructions of NHAI under this clause.

- 2.4 Clause 18.13: In the event NHAI does not exercise its option to undertake the required repair and maintenance after expiry of the 30 (thirty) days period stipulated in Clause 18.12 It shall recover damages from the Concessionaire for default in operating and maintaining the Project Highway in conformity with this agreement. Such Damages shall be payable after the aforesaid period of 30 (thirty) days and until the default is cured. The amount of Damages shall be calculated for each day of default at the higher of the following, namely (a) Rs.10,000 (Rupees Ten Thousand) and (b) 0.1% (Zero point one percent) of the cost of such repair as estimated by the Independent Consultant. Recovery of such damages shall be without prejudice to the rights of NHAI under this Agreement, including Termination thereof.
- 2.5 Clause 18.14: If the Concessionaire commences any works for curing any defects or deficiencies in the Project Highway, it shall complete such works expeditiously in accordance with Good Industry Practice. If such works are carried out in a manner that results in a delay of more than 30 (thirty) days as compared to the time required in accordance with Good Industry Practice, NHAI shall recover Damages from the Concessionaire as if a default had occurred under Clause 18.13.
3. Background:
- 3.1 It is the obligation of the Concessionaire to complete the periodic maintenance within the specified time frame as mentioned in various contract clauses of Concession Agreement.
- 3.2 Considering number of similar cases in NHAI wherein Concessionaires have not taken up the periodic maintenance work in time bound manner, Executive Committee of NHAI in its 327th meeting held on 07.12.2017 decided to Issue Standing Operating Procedure in the subject matter.
4. The Standing Operating Procedure (SoP):
- 4.1 Concessionaire shall start the periodic maintenance work i.e. renewal of BC whenever the roughness value anywhere on the Project Highway reaches 3000 mm/Km to bring it to the Initial value of 2000 mm/Km. However, in case roughness value does not reach 3000 mm/Km anywhere even at completion of every 5 years after Initial construction (Commercial Operation Date), Concessionaire shall complete renewal work before completion of every 5 years after Initial construction.
- 4.2 Further, at the time of termination of the Concession Agreement, Concessionaire shall comply with the Concession Agreement's clauses related to Divestment of Rights and Interests.
- 4.3 The amount of damages shall be calculated for each day of default at the higher of the following:
- (a) Rs.10,000 (Rs. Ten Thousand),
 - (b) 0.1% (zero point one percent) of the cost of such repair work as estimated by the Independent Consultant. For avoidance of doubt, it is clarified that if the renewal work is started and completed in 4 months' time after the due date, then the damages shall be calculated for period of 2 months as the damages is applicable on cost of repair work which is getting reduced on day to day basis when renewal work is being done at site. 30 days cure period shall also be taken into consideration.
- 4.4 For avoidance of any doubt, the following illustrations may be referred in support of which diagrammatic representations are enclosed at Annexure-I:

Illustrations:

- I. Concessionaire achieves COD on 01.01.2009. Therefore, periodic maintenance is to be completed by the Concessionaire by 31.12.2013. Concessionaire commences the renewal work on 01.01.2014 and completes it on 30.07.2014. The total cost of renewal work is Rs.100.00 crore. Total duration/delay in renewal work is 210 days.

Damages to be recovered is higher of the following:

- Damages = $10000 \times (210-30) = \text{Rs. } 18,00,000/-$
- Damages = $0.1\% \times 0.5 \times [1000000000 \times (180/210)] \times (210-30)$
= Rs.7,71,42,857/-

- II. Concessionaire achieves COD on 01.01.2009. Therefore, periodic maintenance is to be completed by the Concessionaire by 31.12.2013. Concessionaire commences the renewal work on 02.03.2014 and completes it on 30.07.2014. The total cost of renewal work is Rs.100.00 crore. Total delay in renewal work is 210 days. However, the duration of renewal work is 150 days.

Damages to be recovered is higher of the following:

- Damages = $10000 \times (210-30) = \text{Rs. } 18,00,000/-$
- Damages = $[0.1\% \times (60-30) \times 1000000000] + [0.1\% \times 0.5 \times 1000000000 \times 150]$
= Rs. 3,00,00,000/- + Rs.7,50,00,000/-
= Rs. 10,50,00,000/-

- III. Concessionaire achieves COD on 01.01.2009. Therefore, periodic maintenance is to be completed by the Concessionaire by 31.12.2013. Concessionaire commences the renewal work on 31.11.2013 and completes it on 30.07.2014. The total cost of renewal work is Rs.100.00 crore. Total duration of renewal work is 242 days. Total delay in renewal work is 210 days.

Damages to be recovered is higher of the following:

- Damages = $10000 \times (210-30) = \text{Rs. } 18,00,000/-$
- Damages = $0.1\% \times 0.5 \times [1000000000 \times (180/242)] \times (210-30)$
= Rs.6,69,42,148/-

- IV. Concessionaire achieves COD on 01.01.2009. Therefore, periodic maintenance is to be completed by the Concessionaire by 31.12.2013. Concessionaire commences the renewal work on 30.08.2013 and completes it on 30.01.2014. The total cost of renewal work is Rs.100.00 crore. Cost of balance renewal work pending on 01.01.2014 is Rs.15.00 crore. Total delay in renewal work is 30 days.

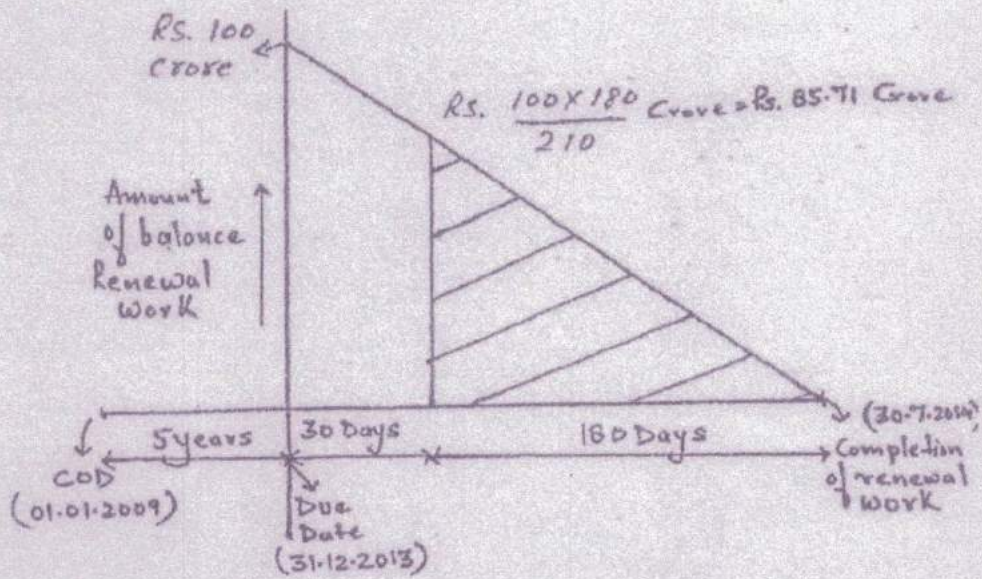
No damages to be recovered.

Encl.: Annexure-I.

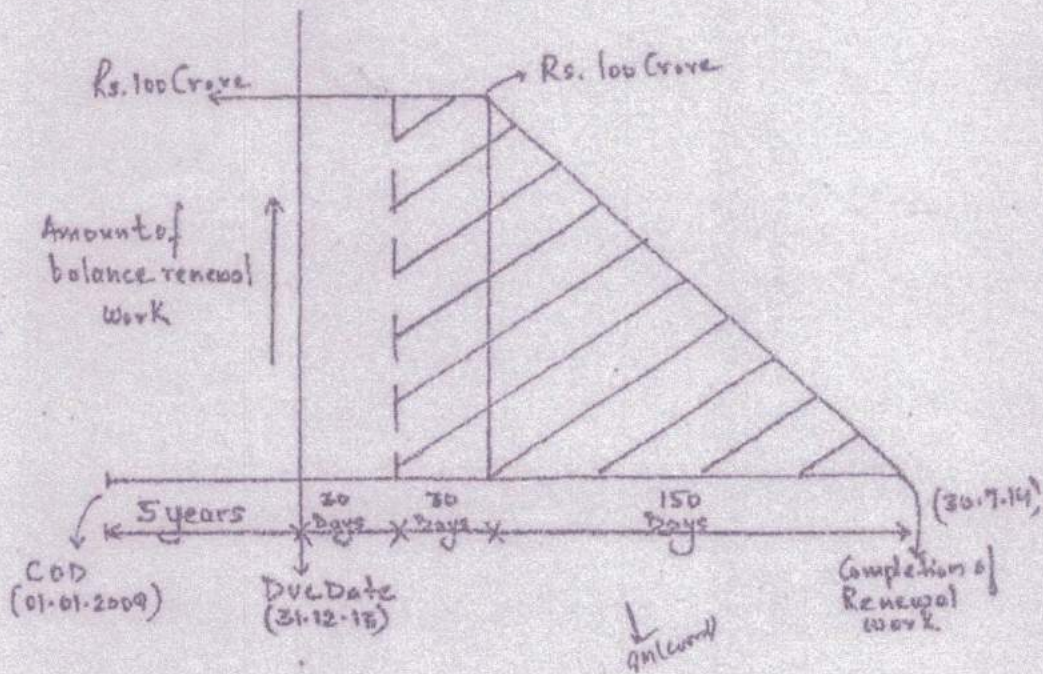
(V.K. Sharma)
Chief General Manager (Coord.)

To
All Officers at NHAI HQ/ROs/PIUs/CMUs/Site Offices.
Hindi Officer for translation in Hindi

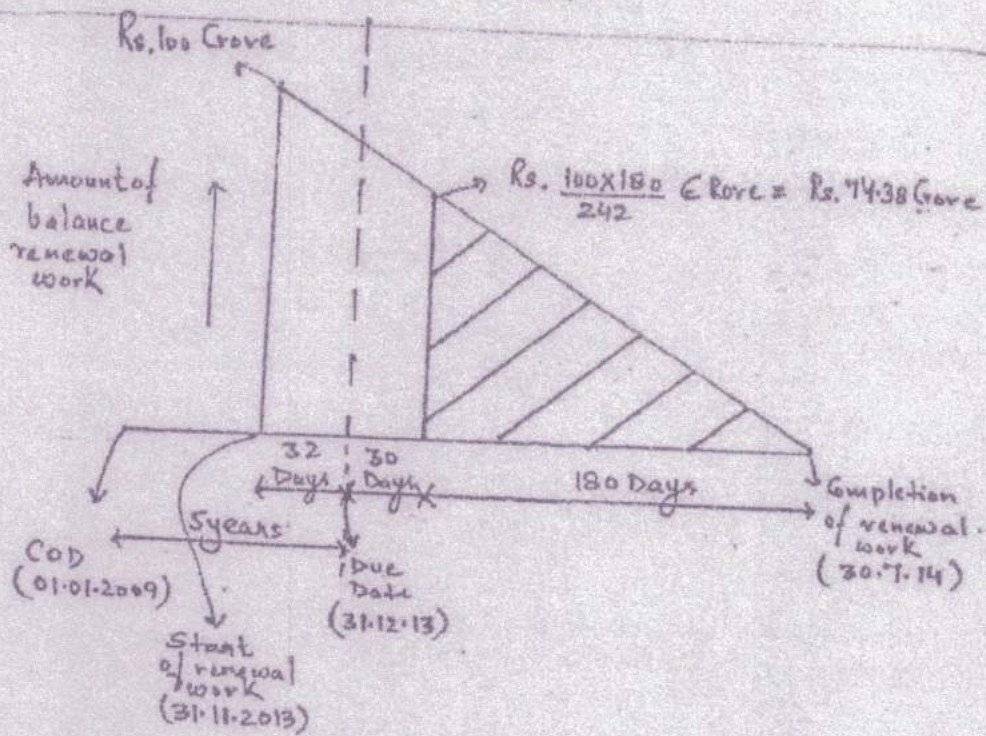
Example - 1



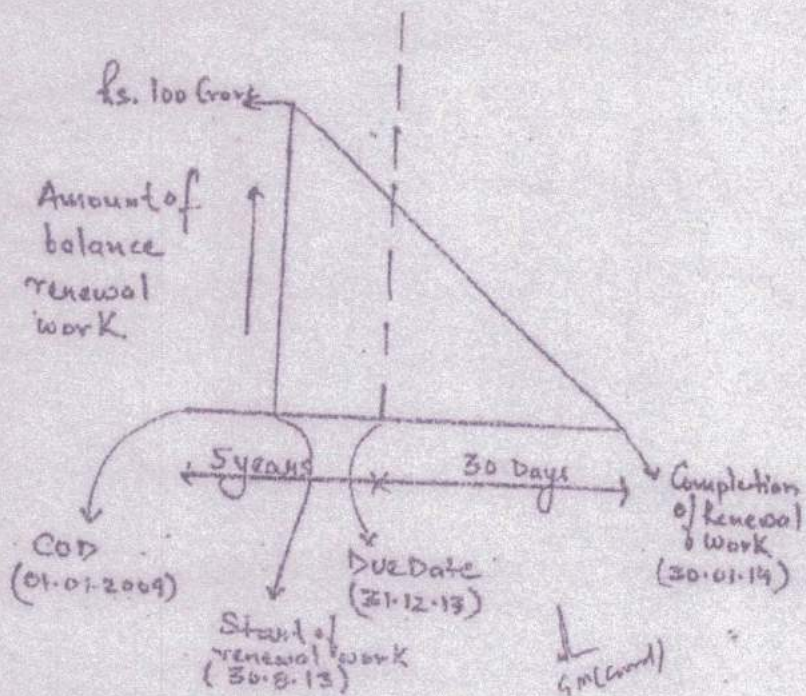
Example - II



Example - III



Example - IV





MADHUCON

TN(DK) EXPRESSWAYS LIMITED

TNDK/NHAI/Theme/NH-7/TN-4/2021/Aug/085

Date: 27.08.2021

To:

The Team Leader,

M/s. Theme Engineering Services Pvt. Ltd.

Door No.M1/200, 13th Cross Street,

R.M. Colony,

Dindigul-624001.

Dear Sir,

Project: Design, Engineering, Finance, Construction, Operation and Maintenance of Karur Bypass - Dindigul Bypass Section from Km. 290.000 to Km. 367.725 on NH-7 under NHDP Phase-II on Build, Operate and Transfer (BOT) Basis.

Sub: Road safety furnitures installation/ erection works completed - Reg.

This is bring to your kind notice that the road safety furnitures (i.e. Road Studs, Curve boards, Chevron boards, Delineators, Solar Blinkers, Hazard Markers, Cluster boards & etc..) installation / erection works along the project highway from Km 290+000 to 367+725 had been completed. The photos are enclosed herewith for your reference.

This is for your kind perusal and records please.

Thanking you,

Yours faithfully,

For TN (DK) Expressways Limited,

Authorized Signatory

Encl: As above.

Copy to: 1. The Project Director, NHAI, Dindigul PIU.
2. TNDK Office file.



Theme Engineering Services Pvt. Ltd.			
NH-07 Karur-Dindigul Bypass Section			
G.M. Road Project			
Dindigul - 624001			
FILE No.			
Lr	RECEIVED DATE	28/08/21	
TL		RE	
BSE		RSE	
MANAGER		COM	
		AUC	

CORPORATE OFFICE :

Plot No - 1129/A, Road No-36,
HITEC City Road, Jubilee Hills,
HYDERABAD - 500 003
Tel : +91 040 23554515/16/17/18

REGISTERED OFFICE :

Madhucon House, Plot No - 1129/A,
Road No-36,
HITEC City Road, Jubilee Hills,
HYDERABAD - 500 033
Tel : +91 40 23556001 /2/3/4
Fax: +91 40 23556005

PROJECT OFFICE :

Km.332, N.H.7, Velanchettiyur,
Aravakurichi - 639 207, Karur (Dt.)
Tamilnadu.
Tel : +91 4320 235262
Fax : +91 4320 235262



TN(DK) EXPRESSWAYS LIMITED

Ref: TNDK/Collector/Dindigul/TN-4/O&M/2018/142

Date: 31.12.2018

To:

The Team Leader,
M/s. Bloom Companies, LLC,
Door No M2/54, 1st Floor,
13th Cross Street,
R.M. Colony,
Dindigul-624101.

Dear Sir,

Project: Design, Engineering, Finance, Construction, Operation and Maintenance of Karur Bypass - Dindigul Bypass Section from Km. 290.000 to Km. 367.725 on NH-7 under NHDP Phase-II on Build, Operate and Transfer (BOT) Basis.

Sub: Renewal of wearing surface of the road pavement as per Schedule 'L' of Clause 2.6.1 of Concession Agreement - Work start intimation - Reg.

With reference to the above subject, that four laning of Karur - Dindigul NH-7 Project, periodical maintenance works to be start on tomorrow (01.01.2019) onwards i.e. Renewal of wearing surface of the road pavement as per Schedule 'L' of Clause 2.6.1 of Concession Agreement. Further the traffic diverting from median opening to median opening (approx 2km) on existing two lane carriage way. The concerned vehicles plying through this road only, so that we can carryout the work conveniently and safely. We are providing required road safety items on working location.

This is for your kind information and record please.

Thanking you,

With regards,

For TNDK Expressways Limited,



Authorised Signatory.

- Copy to: 1. The Hon'ble District Collector, Dindigul.
2. The Superintendent of Police, Dindigul District, Dindigul.
3. The Inspector of Police, Thadikombu Police Station, Thadikombu.
4. The Inspector of Police, vedasandur Police Station, vedasandur.
5. The Project Director, NHAI, Dindigul PIU.
6. TNDK Office file.

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PROJECT OFFICE :

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Tamilnadu.
Tel : +91 4320 235262
Fax : +91 4320 235262